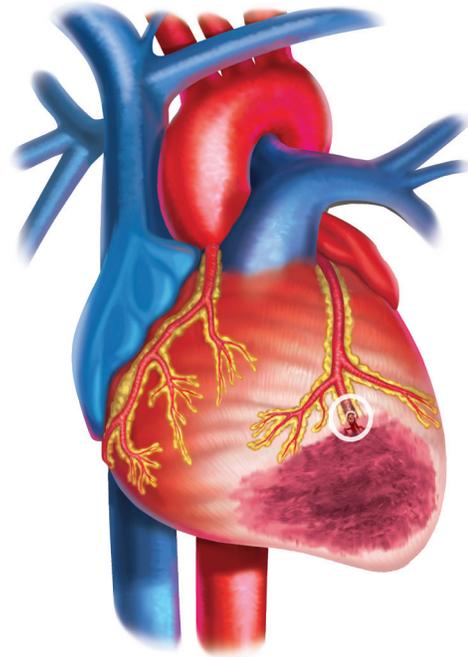


Acute Coronary Syndrome

Coronary arteries send oxygen-rich blood to the heart to keep the muscle working and healthy. Acute coronary syndrome (ACS) occurs when a blood clot blocks a coronary artery, reducing blood supply to the heart.¹



ACS conditions include:

Myocardial infarction (MI, or heart attack)

- Patients can experience two different types of MI:
 - *ST-segment elevation (STEMI)* – A type of heart attack which occurs when an artery in the heart is completely blocking blood flow to a portion of the heart.²
 - *Non-ST-segment elevation (NSTEMI)* – A type of heart attack caused by a partially blocked blood supply to a portion of the heart. While serious, this type of heart attack is not considered as dangerous.²

Unstable angina

- Unstable angina happens when a enough plaque accumulates in a coronary artery to reduce blood flow, blocking the artery and depriving the heart of oxygen and nutrients.³
- This decrease in blood flow causes patients to feel chest pain – even when they are at rest.³
- Unstable angina can become a heart attack if the blood clot grows and completely blocks blood flow through a coronary artery, causing heart muscle to begin to die.³

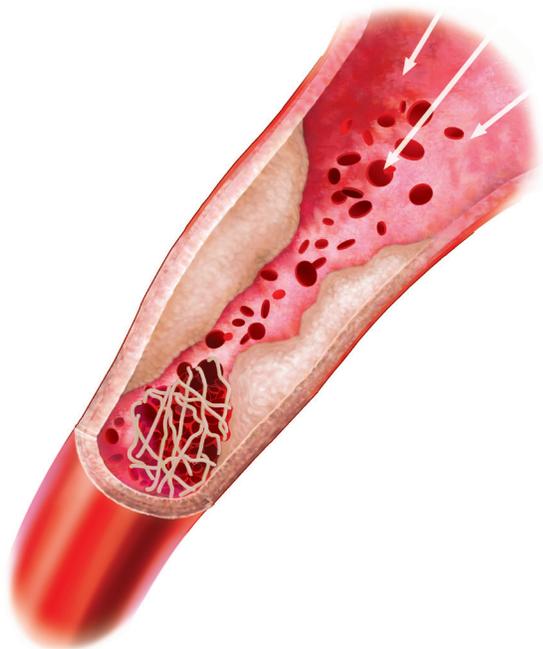
FAST FACTS

- 1 Acute coronary syndrome (ACS) is a complication of coronary heart disease (CHD), which is the leading cause of death in the U.S. and one of the most prevalent non-communicable diseases in the world. ACS occurs when a blood clot blocks a coronary artery, reducing blood supply to the heart.¹
- 2 ACS heart conditions include:¹
 - Myocardial infarction (MI, or heart attack)
 - Unstable angina (severe pain in the chest signifying that a heart attack may soon occur)
- 3 Risk factors for ACS include family history, high cholesterol, high blood pressure, diabetes and tobacco use.⁴
- 4 The main treatment goal for ACS patients is to prevent death or recurrent ACS by stopping the growth of existing clots and halting the formation of new clots.⁵
- 5 Each year, an estimated 1.2 million patients are discharged from the hospital with a primary or secondary diagnosis of ACS.⁶

Causes of ACS

The essential underlying condition for ACS is plaque that collects on the inner walls of coronary arteries. This plaque build-up narrows the arteries, sometimes decreasing the amount of blood flow the heart receives over time.¹ This process is called *atherosclerosis*.⁷

If plaque from the wall of a coronary artery ruptures, a blood clot can form at the site of the rupture. If the clot is large enough to block the vessel and critically reduce blood flow, the heart muscle can be damaged. This process is known as *thrombosis*.¹



Risk Factors

ACS can be caused by a variety of risk factors, including a family history of heart attack or unstable angina. High cholesterol, high blood pressure, diabetes and tobacco use also can contribute to the buildup of plaque in the arteries which may lead to atherosclerosis.⁴

How Common is ACS?

- ACS is a complication of CHD, which is the leading cause of death in the U.S.⁸
- Each year, an estimated 1.2 million patients are discharged from the hospital with a primary or secondary diagnosis of ACS.⁶
- An estimated 34 percent of the people who experience a heart attack in a given year will die of it, and approximately 15 percent of heart attacks will also result in death.⁶

Economic Burden of ACS

The direct and indirect costs of ACS are substantial.⁹ In 2007, the U.S. estimated annual direct costs to the healthcare system for coronary heart disease – a portion of which were associated with ACS – were \$177.1 billion.⁶

Currently Available ACS Treatments

ACS occurs when a blood clot blocks a coronary artery, reducing blood supply to the heart. The main treatment goal for ACS patients is to prevent death or recurrent ACS by stopping the growth of existing clots and halting the formation of new clots.⁵ The primary treatment for acute coronary syndrome includes a procedure known as angioplasty, during which a physician inflates a small balloon to open the artery. A stent, a wire mesh tube, may be permanently placed in the artery to keep it open to help restore blood flow.⁵ As a secondary prevention, antiplatelet treatments are used to help prevent blood platelets from clumping together and forming clots. Two common antiplatelet therapies used to treat ACS are aspirin and clopidogrel.¹⁰ The combination of these two treatments is common for ACS patients.¹ Antiplatelet drugs may also be combined with an anticoagulant or blood thinner (such as warfarin), to help manage the condition.¹⁰

In addition to medications, coronary artery stents and other cardiac surgery techniques can be used to treat ACS.¹⁰

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